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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/037,406	01/03/2002	Yuuki Okazaki	FUJ 18.975 (100794-11725)	7322
26304	7590	05/03/2005	EXAMINER	
KATTEN MUCHIN ZAVIS ROSENMAN 575 MADISON AVENUE NEW YORK, NY 10022-2585			TRAN, KHANH C	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 05/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/037,406	Applicant(s) OKAZAKI ET AL.	
	Examiner Khanh Tran	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>03/17/04 & 03/11/05</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sutton U.S. Patent 5,805,648.

Regarding claim 1, Sutton invention is directed to method and apparatus for performing search acquisition in a CDMA communication system. The CDMA receiver in figure 1 includes:

a search controller 18 for providing an offset hypothesis to PN generator 20. In column 6 line 25 via column 7 line 65, figure 5 discloses a flow chart illustrating the invention operating in conjunction with a variable window size implementation of the searcher algorithm. In figure 5, a three-stage acquisition technique is used. In block 80, a large window of PN values is swept. The first stage corresponds to the claimed first mode. In block 82, if a peak greater than a detection threshold (THM), then the flow proceeds to block 84. This time a sweep in a smaller set of PN values around the detected peak is performed. The smaller set of PN values is illustrated in figure 4 as a small window, the smaller set of PN values corresponding to the claimed second mode in a second search time range. In figure 1, the search controller unit 18, PN sequence generator 20,

despreader 6, noncoherent accumulator and threshold comparer 16 constitute the claimed searcher unit. The searcher unit detects path of direct incoming waves and other paths with different propagation delays due to multipath environment.

Figure 1 does not show a finger unit as set forth in the claim. However, referring to figure 5, in block 88, Sutton teaches the step of assigning fingers to peak zoom in on peak and sweep again. In light of the foregoing teachings, the receiver in figure 1 inherently includes a finger unit as claimed in the application claim. The assigned fingers in block 88 demodulate the received signal in accordance with the selected PN function; see column 7, lines 40-60. Hence, the fingers perform inversing diffusing signals of the paths detected by the search controller 18.

Sutton does not expressly disclose the claimed step of combining a plurality of signals inversely diffused. Nevertheless, in column 7 lines 55-60, the received signal is demodulated in accordance with the selected PN function. The results of the demodulated signal are analyzed to determine if the signal is in lock, and if so then the acquisition is complete. Because the same PN function is used to demodulate the received signal, it would have been obvious for one of ordinary skill in the art at the time of the invention that Sutton teachings can be modified to combine demodulation results and use the combined result to determine if the system lock or not.

In view of the aforementioned discussion, the search controller 18 operates in first mode (e.g. provides offset hypothesis to PN generator to sweep in large window), and operates in a second mode when the system is in lock, corresponding to synchronization of the demodulated signal.

Regarding claim 2, in column 4, lines 1-11, Sutton teaches that the test is repeated a number of times in order to give higher certainty to the determined condition of successful lock. After the system is in lock condition, the searcher controller 18 switches to the second mode, which is the synchronization mode.

Regarding claim 3, figure 1 includes a despreader 6, which correlates the input signal with PN code generated by I and Q PN sequence generator to generate a correlation value in accordance with windows of PN offsets.

Regarding claim 4, claim 4 is rejected on the same ground as for claim 1 because of similar scope. Furthermore, Sutton teachings apply to spread spectrum communication environment, such as CDMA, time division multiple access (TDMA), and FDMA; see column 1, lines 10-30. Furthermore, with time division multiple access, the search unit operates in the same manner as discussed in claim 1, but in this case, to lock on a plurality of channels for every time slots.

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Regarding claim 5, claim 5 is rejected on the same ground as for claim 2 because of similar scope.

Regarding claim 6, claim 6 is rejected on the same ground as for claim 1 because of similar scope.

Regarding claims 7-8, claims 7-8 are rejected on the same ground as for claim 2 because of similar scope. Furthermore, as recited in claim 2, the test is repeated a number of times in order to give higher certainty to the determined condition of successful lock. The number of times can be a predetermined number of times as appreciated by a person of average skill in the art. The predetermined number of times is equivalent to a predetermined time period.

Regarding claim 9, claim 9 is rejected on the same ground as for claim 3 because of similar scope.

Regarding claim 10, claim 10 is rejected on the same ground as for claim 1 because of similar scope. Furthermore, with time division multiple access, the search unit operates in the same manner as discussed in claim 1, but in this case, to lock on a plurality of channels for every time slots.

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Regarding claim 11, claim 11 is rejected on the same ground as for claim 2. Furthermore, with time division multiple access, the search unit operates in the same manner as discussed in claim 1, but in this case, to lock on a plurality of channels for every time slots.

Regarding claim 12, claim 12 is rejected on the same ground as for claim 1 because of similar scope. Furthermore, referring to figure 5, in column 7, lines 55-67, Sutton further teaches that if the demodulation results indicate the signal is not in lock, in block 92, the calculated energy values for the small window are compared to the validation threshold value (THV). If in block 92, there are calculated energy values in the small window, which exceed the validation threshold, then the flow proceeds to block 94. The process loops back to block 88 to determine if the demodulated signal is in lock.

Conclusion

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Bayley U.S. Patent 6,775,252 B1 discloses "Dynamic Adjustment Of Search Windows Size In Response To Signal Strength".

Hayata U.S. Patent 6,356,542 B1 discloses "Reception Path Search Method And Searcher Circuit Of CDMA Reception Device".

Sato U.S. Patent 6,233,454 B1 "Mobile Station".

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Iwaskai et al. U.S. Patent 6,421,369 B1 discloses "Receiving Method And Receiver For Spread Spectrum Signal".

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh Cong Tran

04/29/2005

Examiner KHANH TRAN